



University
of Glasgow

Macartney, H. (2015) Faith in facsimile? The invention of photography and the reproduction of Spanish art. *Art in Translation*, 7(1), pp. 95-122.

There may be differences between this version and the published version. You are advised to consult the publisher's version if you wish to cite from it.

<http://eprints.gla.ac.uk/109939/>

Deposited on: 25 September 2015

Enlighten – Research publications by members of the University of Glasgow
<http://eprints.gla.ac.uk>

Translating Cultures in the Hispanic World

Dr Hilary Macartney (Research Associate, University of Glasgow)

Faith in Facsimile?

The Invention of Photography and the Reproduction of Spanish Art¹

Abstract: This paper considers the relationship between traditional prints, painted copies and photography in the reproduction of art, including the development of photomechanical processes in book illustration, from the point of view of the historiography of art. Its aim is to examine the impact of these on the methodology of the emerging discipline of art history and the establishment of a canon of Spanish art during the nineteenth century. Focusing principally on the Scottish writer Sir William Stirling Maxwell (1818-78), and including comparison and contrast with another pioneer in the historiography of Golden Age art in Spain, the German art historian Carl Justi (1832-1912), it explores some of the concerns they expressed around the reliability of both new and established methods of reproduction of art, including notions of facsimile and translation of meaning, and ponders the continuing relevance of such concerns in today's digital age.

Keywords: reproduction of art; Spanish art; early photography; printmaking; photomechanical processes; facsimile; Sir William Stirling Maxwell; Carl Justi; Velázquez; Murillo; El Greco.

The theme “Translating Cultures in the Hispanic World”, to which this issue of *Art in Translation* is dedicated, will be explored in this essay through a number of examples of intermedial translations, in which the transmission of images of Spanish Golden Age art involved one or more shifts from one medium to another. In fact, some of the most significant nineteenth-

century debates around the suitability of photography as a medium of reproduction of art were highlighted in books which are now regarded as cornerstones of modern historiography of Spanish art. The cases examined here demonstrate the challenges of maintaining the integrity or essential meaning of images through such transformative reproductive processes. Modern viewers are likely to find the results unsatisfactory in many if not all these historical instances, but they may also serve as useful prompts to consider our continuing dependence as art historians on photographic reproductions, and the assumptions that today's advances in technology might increasingly encourage us to make about the transfer of ideas through images. The improvements in the accuracy of photomechanical reproduction since the 1980s, primarily as a result of advances in digital color management, are of course very significant. Nevertheless, lack of quality control in the production process, or insufficient funding to ensure satisfactory results, all too often remain major obstacles, as almost every art historian will testify.² Similarly, online digital images and electronic publications may have made the study of art more accessible than ever before, but how many computer screens for library, office or personal use are calibrated (and regularly checked) for accuracy of color and tone? And consultation of online images of art on open-access sites may often provide unwitting users who have little or no familiarity with the original artworks with highly unreliable reproductions, including poor-quality amateur photographs, low-resolution "pirated" versions, or copies and pastiches. Thus, our initial sense of smug amusement when viewing many of the illustrations used by or produced for our nineteenth-century art history predecessors may turn out to be premature, whilst the reservations they articulated about the impact of technological advances in image reproduction on artistic judgment may henceforward have ever more resonance.

The dawn of the age of reliance on photography for the study of art was marked by the appearance of William Stirling's *Annals of the Artists of Spain* in 1848. According to William Ivins in his landmark book on the history of the reproduction of images, *Prints and Visual Communication* (1953), Stirling's publication was "to be regarded as the cornerstone of all modern artistic connoisseurship" because of its method of illustration, "for it contained the first exactly repeatable pictorial statements about works of art".³ Ivins was referring to the limited edition volume of Talbotype photographic illustrations that accompanied the three volumes of text and made the *Annals* the first book on art to be illustrated with photographs.⁴ Looking at these illustrations nowadays, such as the one reproduced here (Fig. 1), the modern viewer is likely to be underwhelmed, especially when it is realized that Velázquez's painting, thought to represent a sibyl and traditionally believed to be portrait of the artist's wife Juana Pacheco (Fig. 2), is here reproduced not through direct photography but by means of an intermediary, in this case a lithograph of 1826 by Enrique Blanco (Fig. 3). Many of the *Talbotype Illustrations to the Annals of the Artists of Spain*, which totaled sixty-eight, including title and dedication pages, were of copies produced by conventional printmaking techniques or, in some cases, painted copies. Nowadays, we would feel cheated by such dependence on intermediaries and, therefore, disinclined to trust the reliability of the illustrations in conveying either a physical replica of the original or indeed its spirit or essential meaning. The much faded condition of the photographs in the majority of copies that have been traced out of the fifty that were produced now places yet another barrier between the viewer and the original artwork.⁵

In fact, these questions of faithfulness to the original were the very ones that William Stirling (1818-1878), later Sir William Stirling Maxwell, and his contemporaries were also wrestling with at the dawn of both photography and the modern discipline of art history as they sought to

assess the potential of this new means of image reproduction and to weigh it against or in combination with more traditional methods.

As far as the text of the *Annals* is concerned, we might likewise initially struggle with Jonathan Brown's assessment of it in 1978, in his *Images and Ideas in Seventeenth-Century Spanish Painting*, as a key forerunner of modern contextual art history of Spain, given Stirling's sometimes ornate or self-consciously archaic style of writing, or some of the nineteenth-century prejudices he betrays.⁶ The writings of the German scholar Carl Justi (1832-1912) may also present some problems of interpretation for modern readers: indeed, in many ways he was more judgmental and dogmatic than Stirling, but in his *Velazquez und sein Jahrhundert* of 1888, which was translated into English as *Velazquez and his Times* in 1889, we probably recognize his consistently rigorous approach as a more immediate prefiguration of mainstream twentieth-century art historical methods, especially in his more direct engagement with, and analysis of, the artworks themselves.⁷

Justi himself was largely critical of Stirling, and reluctant to acknowledge his significance as a predecessor in the field. Thus, he was careful to identify Stirling as a gentleman scholar, albeit "a well-trained historian", rather than as a member of the new profession of art history. Amongst his frustrations with Stirling was the fact that the Scottish author "linger[ed] rather over graphic descriptions of grand State ceremonials and festivities than on artistic processes". Similarly, in commenting on Stirling's monograph on Velázquez (the first ever on that painter, and therefore a direct forerunner of Justi's own work), he complained of the reliance on "book knowledge", rather than "study of the originals themselves".⁸ On the other hand, it was Stirling's book knowledge of areas such as festivals in particular that helped to provide him with an understanding, unusual at that date, of the important role of Golden Age artists in the ephemeral

art and architecture of such ceremonials and festivities, as later scholars such as Brown and Enriqueta Harris Frankfort recognized.⁹ Stirling's fascination for these illustrated books, of which he formed an important collection, was likewise part of the same deep interest in book illustration that prompted his concern around questions of reproduction of art and his openness to experimentation with new methods, and led directly to his decision to explore the possibilities of photography as a new method of illustration of art, in addition to the conventional ones used in the text volumes of his *Annals*.

Despite the limited circulation of the *Annals* Talbotypes, Stirling had high hopes that his experimental volume would encourage "other abler contributors to the history of art to illustrate their works by the pencil of nature [ie. photography]", as he explained in his Preface.¹⁰ At least at the time the volume was conceived in 1847, he believed that photography's "greater precision than the graver" meant that it offered unprecedented possibilities both as a permanent record of great art, and in providing wider access to examples of this, including dispersed collections or series which were intended to be seen together.¹¹

The experimental nature of the *Annals* Talbotypes meant that only portable items which he or friends owned were photographed, though the selection also reflected coverage in the text volumes of media other than paintings. It thus included drawings by Cano and Murillo, etchings by Ribera and Goya, two small polychromed sculpture reliefs attributed to Montañés, and a number of examples of Spanish book engravings, in addition to watercolor copies and prints after oil paintings, such as the Velázquez portrait or sibyl (Fig. 1).¹² Logistics and other practical and technical considerations did not make photographing directly from oil paintings either realistic or achievable in most cases at that date, though four copies in oils after Murillo were included. As discussed below, two oil sketches attributed to Goya which were photographed

were, however, not used. Overall, good results were achieved in the photography of many, but by no means all the works of art on paper selected. The reasons for the (relative) success or failure of particular examples were clearly complex. For example, in photoscientific terms, engravings and lithographs were either achromatic or monochromatic, and thus, compared with results achieved with painted and polychromed works, did not fall foul of the limited spectral sensitivity of the photographic emulsions in use in the 1840s.

In the forty years between the publication of Stirling's *Annals* with its Talbotype illustrations, and Justi's *Velazquez*, so many advances had occurred in photographic and image reproduction technology that we may find it rather astonishing that the image used in Justi's book to illustrate the same painting of a *Sibyl* by Velázquez seems at least as unsatisfactory as a reproduction of the original artwork (Fig. 4). Stirling's illustration via a lithograph, which was itself a relatively new method of producing multiple images, dating back only to the turn of the eighteenth and nineteenth centuries, gained steadily in acceptance during the first half of the latter as a vehicle for reproducing the tonal qualities of paintings. Many still preferred engravings, whose repertoire of lines, dots and cross-hatching had long established this technique as a familiar and accepted means of conveying the outlines, tonal relationships and *chiaroscuro* of painted compositions, especially in the hands of skilled and specialist exponents. It had been admired by scholars and collectors of the eighteenth-century antiquarian and neoclassical traditions, in which art history in Germany had deep roots. Justi's book, right through to its third German edition in 1923, continued to be illustrated with wood engravings. These were similar to the engravings on wood and steel that had also illustrated the text volumes of Stirling's *Annals*. The streamlining of printing technology during the nineteenth century meant that the inclusion of images such as these became ever cheaper, especially with the rise of photomechanical reproduction in the

1860s, even if their artistic quality generally declined.¹³ But for all their shortcomings as reproductions of art, they could at least be printed with printer's ink, enabling many of them to be included on the same page as the text, and thus also embedded as integral elements of the discourse.

Ironically, despite its technological innovation, the *Annals* Talbotypes volume remains a handcrafted product. It belongs to the period of what are referred to as the incunabula of photography: photographic images created by the use of chemical compounds of silver, printed by hand on paper coated to sensitize it to light, and then pasted (or tipped) into a book.¹⁴ From the 1870s on, due to the problem of fading, silver photographic prints were replaced by prints which reproduced photographs by a number of permanent and photomechanical processes (many of them patented), including carbon prints, Swantypes, Woodburytypes, collotypes, photogravure and photolithography.¹⁵ By the later 1880s, as Trevor Fawcett explained in an important article on the complex relationship between manually produced reproductive prints, photography, and photomechanical reproduction, the introduction of developments such as the cross-line screen and of processes such as rotary photogravure and half-tones rapidly brought down costs, speeded up production, and virtually signaled the end of the hand-mounted photograph except for special purposes.¹⁶ Although the wood engravings that illustrate Justi's landmark study now appear crude and unsophisticated as reproductions of Velázquez's paintings, they nevertheless reflected technological progress, compared with the *Annals* illustrations, in that most were copied after photographs of the originals.¹⁷ Increased accuracy in the copying of paintings for illustration purposes had in fact been seen as one of the principal applications of the new medium of photography from the start.¹⁸ As in the pre-photography era, loss of quality through copying was

still often a major problem, as the comparison between the photograph by Juan (or Jean) Laurent and the wood engraving shows (Fig. 5).

Justi explained his aims and approach to the illustrations in his Introduction as follows:

Our woodcuts, executed by R. Brend'amour, are based, apart from drawings by artists, mostly on J. Laurent's photographs and Braun's masterpieces [...] These cuts are intended merely as illustrations, affording such a measure of help as the reader's imagination could not very well dispense with. It was not my intention to produce a sumptuous volume after present models, even were the means available. The book is the production of a writer who wants readers, not a text for a volume of pictures, where the author points, like a showman in the fair, to his exhibition. A work such as this should stand on its own merits.¹⁹

Here, he seemed to justify the relative lack of sophistication or reliability of the illustrations by arguing for access and affordability instead. He was clearly also concerned to distinguish the serious art historical purpose of his own book from that of the new category of lavishly illustrated books on art (forerunners of the so-called "coffee-table books"), often with minimal text, or the albums of photographic plates or photomechanical reproductions that became popular with both institutional and individual collectors, as updated versions of the portfolios of engravings and lithographs produced in the eighteenth and early nineteenth-century.²⁰ Presumably, Justi hoped that his readers would have the means and interest to be able to see many of the original works themselves, in which case his illustrations would function as aides-mémoire, or was he content for his readers to consult Laurent's and Braun's photographs as more reliable surrogates – after all, he acknowledged that those by Braun were

“masterpieces”? Adolphe Braun et Cie., originally of Dornach (Alsace), obtained permission to photograph paintings in the Prado in 1879 and 1880, and in 1881, Gaston Braun, who had inherited the firm, sent a gift of three splendid albums of the resulting photographs to King Alfonso XII of Spain.²¹ The firms of both Laurent and Braun also expanded into producing high-end photomechanical reproductions of art around the time Justi’s book on Velázquez appeared. Indeed, Laurent opened a studio dedicated to collotype production near their photography studio in Madrid in 1889, and issued a volume of eighty-five reproductions of paintings by Velázquez in the Prado.²²

Commentators on Justi pointed to the use of wood engravings in his Velázquez book as evidence of his distrust of photography as a means of reproducing art, which seems to have become a matter of legend amongst the scholars who succeeded him. Wilhelm Waetzoldt, in his study of historiography of art and its early practitioners in Germany, published in 1924, claimed that Justi believed that photography gave a fundamentally false impression of Velázquez’s palette and his use of highlights.²³ A similar problem was also noted by the famous scholar of Italian art Bernard Berenson in relation to Venetian painting in 1893 in an article advocating the use of isochromatic photography as a remedy.²⁴ But where Berenson became one of the greatest champions of photography as the tool of art history, Justi – at least according to Waetzoldt – dreaded the approach of a time when art history students would depend on photographic processes and equipment to mediate interpretation of art. Such dependence he saw as further evidence of the brutalization of human sensibilities through nineteenth-century mechanization and materialism. Waetzoldt traced this attitude back to Justi’s earlier study of the neoclassical historian of art Johann Joaquim Winckelmann.²⁵ Thus he placed Justi at the heart of the debate on the usefulness of photography in art history. The debate began in the nineteenth century, in the decades soon

after the invention of photography on the one hand, and the professionalization of art history in Germany on the other, and carried on into the twentieth century until at least the 1930s in the discourse of major figures, including Walter Benjamin's study of "The Work of Art in the Age of Mechanical Reproduction" and Erwin Panofsky's article on "Original and Facsimile Reproduction".²⁶ Later scholars on the use of photography in history of art, such as Wolfgang Freitag and Trevor Fawcett, writing in the 1970s and 80s, also considered Justi's distrust of photography in his teaching. According to Fawcett,

Justi, [Paul] Kristeller, and [Hans] Tietze all feared that ersatz versions of works of art might bring about a coarsening of visual response [...] and warned against allowing them to usurp the place of the originals. Never must the distinction between the archetype and its replicas be forgotten; in no circumstances should a photograph be considered an adequate substitute.²⁷

Not the least of the advances in photography in the intervening years between the *Annals* of 1848 and Justi's *Velazquez* of 1888 was the possibility of photographing paintings directly within museums and galleries, facilitated by more sophisticated cameras and lenses and the greater stability of the photographic process itself from the early 1850s.²⁸ Improvements included the move from the calotype or Talbotype process to that of the wet collodion process developed by Frederick Scott Archer and others at that date, the introduction of albumen coating on positive prints which until then had been of salted paper, and the replacement of fragile paper negatives with sturdier glass plates.²⁹ In the 1860s, the French photographer Jean Laurent, who settled in Spain and styled himself Juan Laurent, photographed most of the works in the Prado or Royal Museum in Madrid.³⁰ His photograph of Velázquez's *Sibyl* (Fig. 5) shows some of the special challenges which oil paintings presented for the first photographers – and in many ways continue

to pose today. In the modern digital image (Fig. 2), it can be seen that much of the paint surface is thin and abraded, especially at the right. It also allows us to appreciate the remarkable subtlety of the tonal variations and the brushwork. At the same time, we are aware of the texture of the canvas. Our awareness of these features does not impede us in our reading of the image: indeed, we may feel they enhance our experience and add to our fascination. In the 1860s when Laurent tackled the photography, there may also have been additional difficulties relating to the picture's condition, such as accretions of dirt, discolored varnish, or the tension of the canvas, or problems with the evenness of the lighting. And especially in a painting of such subtlety of tone, the continuing limitations in the spectral sensitivity of photography may well be perceived as impinging upon the viewer's experience of the portrait, as Justi would appear to have believed.

Looking back at the lithograph by Blanco (Fig. 3), we may now perhaps begin to understand the selective means through which the lithographer achieved the clarity of his rendition of the image, albeit at the expense of much of the subtlety. Stirling and his photographer Nicolaas Henneman had in fact already encountered many of the difficulties faced by Laurent in photographing Velázquez's *Sibyl* when Stirling had asked Henneman to "see how we could do oil painting" during the photography sessions for the *Annals* Talbotypes volume in March to June 1847.³¹ The phrase underlines the spirit of experiment with which the sessions were undertaken, and we are fortunate that the National Media Museum in Bradford contains so many of what appear to be trial proofs of two of the oil sketches attributed to Goya owned by Stirling which he mentions in the text of the *Annals*.³² The limited spectral sensitivity of photographic emulsions at this date, in addition to the thickly impastoed paint, the relatively coarse texture of the canvas, and the lighting evidently proved too much of a challenge in this instance.

Like Justi, Stirling had inherited much of the eighteenth-century tradition of connoisseurship in his appreciation of the more established printmaking techniques, such as engraving, as appropriate means of communication of visual imagery. Amongst collectors and connoisseurs, concepts of translation and transmission had, of course, long been standard in their assessments of faithfulness to the original artwork. Throughout his life, Stirling devoted considerable effort to the scholarship and collecting of prints after Spanish paintings, and especially to those after works by Velázquez and Murillo.

His most detailed study of this field was his *Essay towards a Catalogue of Prints after [...] Velazquez and [...] Murillo*, published privately in 1873, which reflected his own collection, by then very extensive, and that of his friend and fellow collector, Charles Morse.³³ This catalogue was in turn one of the inspirations for the catalogue of the paintings of Velázquez and Murillo, published in 1883, by the American scholar Charles B. Curtis.³⁴ He was another avid collector of these prints and included them as evidence of the history of the paintings. A century later, Stirling's *Essay* also inspired an outstanding paper given by the late Enriqueta Harris Frankfort at the University of Edinburgh in 1984, on Stirling's catalogue and the now largely disbound and dispersed albums containing his collection.³⁵ Much of her interest, like Stirling's, was in the way in which the prints contributed to the critical reputation of the two artists. The present paper can add little to her study, except to offer some observations on the transmission of the likeness of Murillo through the prints after that artist's famous self-portrait now in the National Gallery in London (Figs. 6-7). As we shall see, portraits of artists, including the transmission of their authentic likeness through prints, were topics of particular interest to Stirling as an art historian and a collector, and were especially relevant to his still largely biographical approach to art history, not least as potential illustrations to his writings.

Stirling gave his fullest consideration of the special problems of authenticity in the transmission of portraits in his preface to a later work, *Examples of the Engraved Portraiture of the Sixteenth Century*, 1872, which included the observation that “in engraved portraiture [...], the tenth transmitter of a famous face has often transmitted little beyond the blunders of nine previous artists and his own”.³⁶ His comment may not have been an exaggeration, especially if we bear in mind the results obtained from experiments in psychology carried out by F.C. Bartlett in the early twentieth century, and later discussed by Ernst Gombrich in his book *Art and Illusion: A Study in the Psychology of Pictorial Representation* (1960). In one of these experiments, the copying and recopying of an Egyptian hieroglyph by participants resulted, within ten stages, in its transformation into the shape and formula familiar to modern western viewers as representing a pussycat.³⁷

The entries in Stirling’s *Catalogue of Prints after Velazquez and Murillo* often charted similar stages of transformation in copies of all genres of these artists’ works. The listings of prints, according to subject and then in order of date (either documented or inferred by Stirling), would frequently include engravings which were based on earlier versions, and were therefore at several removes from the original image. In the case of portraits deriving, or claimed to derive, from Murillo, all but two of the entries in the five- page section were said to be self-portraits. The engraved *Self-Portrait* of Murillo which Stirling provided at the start of the entries on the artist (Fig. 6) is indeed based on the original painted *Self-Portrait* now in the National Gallery, London (Fig. 7), but, as we shall see, it is also an example of the process of transformation which the catalogue sought to record. Stirling’s illustration is copied from Richard Collin’s engraving (Fig. 9) which appeared in Joachim Sandrart’s *Academia nobilissimae artis pictorae* [*Most Noble Academy of the Art of Painting*] of 1683, in which Murillo was the only Spanish artist

mentioned, apart from Ribera. Murillo's inclusion in this book, a year after his death, was the beginning of his international reputation, as well as a major source of the proliferation of the self-portrait prints. The engraving in Sandrart is in turn a smaller, reversed version of the larger engraving, also by Collin, dated 1682 (Fig. 8). This earlier print by Collin had been engraved from the original painting at the request of Murillo's friend Nicholas Omazur, as recorded in its inscription.³⁸

Stirling correctly inferred that the print in Sandrart, along with many later prints, derived from the same prototype, namely the 1682 print by Collin, which "as the earliest, and as being engraved at the expense of his friend, must be regarded as the most authentic".³⁹ Tracing the painting from which so many prints ultimately derived took much longer. Stirling evidently did not know the painting then in the collection of the Earl Spencer at Althorp (and now in the National Gallery) at the time of publication of the *Annals*, and instead proposed a portrait formerly in the Aguado Collection in Paris as a possible prototype for the print, though he feared that this too was a copy.⁴⁰ Perhaps the only time he saw the portrait from the Earl Spencer's collection was when it was lent to the Manchester Art Treasures exhibition in 1857.⁴¹ With its clever references to the illusionism of painting, as well as the traditional attributes of the art and likely associations with the Seville Academy, this *Self-Portrait* would have been of great interest to Stirling. The Manchester exhibition was also most likely to have been his opportunity to buy or commission the watercolor copy he owned (Fig. 10). It is not signed or dated but may be by Joseph West, who painted several copies owned by Stirling of Murillos which were in the exhibition, or by William Barclay's son Sidney, whose watercolor copy of Francisco Ribalta's *Self-Portrait with his Wife*, also in the show, was acquired by Stirling and illustrated in the second edition of his *Annals*.⁴²

Beyond sharing the multiple print medium, the Murillo *Self-Portrait* engravings differ from each other, as well as from the original painting, in many respects, including function, meaning, size and execution. The large print commissioned by Omazur was presumably for limited circulation. Stirling knew only one proof, in the collection of Valentín Carderera in Madrid, and described it as “very finely engraved”.⁴³ Changes in design that dilute the illusionism compared with the painting, such as the fact that Murillo’s hand no longer rests on the frame, as well as the omission of the attributes of the painter, may have been directed by Omazur or negotiated by Collin. In Collin’s second print, for Sandrart, the references to painting’s illusionism have all but disappeared and the likeness has also begun to fade. In the illustration for Stirling’s *Catalogue* (Fig. 6), the features have become considerably coarser. In his defense, Stirling was at least aware of the problems: his *Catalogue* was thus both an admission of the inevitability of such changes and an attempt to record them, and in his experimentation with new techniques of reproducing images, he sought ultimately to eliminate unconscious or accidental changes.

Compared with Murillo, or even Velázquez, El Greco was much less well known internationally in the mid-nineteenth century. In spite of Stirling’s misgivings about El Greco’s later style, which he shared with other nineteenth-century writers on the artist, the *Annals* offered the fullest account of this painter in English at that date.⁴⁴ The entry also included an engraving of the portrait of a painter (Figs. 11-12), then in Louis-Philippe’s Galerie Espagnole at the Louvre and thought to be a self-portrait, though it is now identified as a portrait of El Greco’s son, Jorge Manuel. As Fernando Marías has pointed out, the engraving was one of the earliest reproductions of this painting.⁴⁵ In fact, Stirling also included a reproduction of the *Lady in a Fur Wrap* in the *Annals*. That portrait, then thought to represent El Greco’s daughter, was much admired at the Galerie Espagnole, and became one of the most famous and reproduced paintings attributed to El

Greco.⁴⁶ But whereas the *Lady* appeared in the limited edition volume of *Annals* Talbotypes, the supposed *Self-Portrait* was published in the text volumes in a relatively large edition of seven hundred. The engraving after El Greco's 'delineation of his own fine Hellenic features' had an important context within the *Annals*' biographical approach noted above.⁴⁷ Likewise, the clear relationship of the portrait to the kind of information on artistic theory and practice provided in the art treatises of the day would also have been valued by Stirling, who was a major collector of such texts.⁴⁸ The engraving by H. Adlard in the *Annals* was in turn based on a watercolor copy commissioned by Stirling from William Barclay around 1844-6, apparently with the specific intention of obtaining illustrations for his book (Fig. 13).⁴⁹ Once again the loss of likeness through replication can be observed in the process: for example, Barclay changed the proportions of the original to a squarer format that was also followed by Adlard, presumably because Stirling considered this aspect ratio more suitable for the purpose of book illustration. In particular, the disquiet so typically displayed by El Greco's sitters in acknowledging the gaze of the viewer/artist is here replaced by an equally self-conscious and increasingly affected emphasis on the pose of the sitter as painter.

Stirling's concern to replicate this portrait did not end with the *Annals* illustration, however. Another opportunity arose when the Louis-Philippe Collection was auctioned in London in 1853. Presumably he was dissatisfied with the Barclay watercolor and Adlard engraving. Certainly Stirling was continuing to collect illustrations for a proposed second edition of the *Annals* at this time, though in fact this never appeared in his lifetime.⁵⁰ After the painting was bought by Colnaghi at the sale, Stirling appears to have borrowed it for copying purposes, before it was then taken to Seville by its new owner, the Duke of Montpensier, son of Louis-Philippe. A second watercolor copy was executed by Barclay (Fig. 14) whilst the portrait was at Stirling's

London house at Park Street, Mayfair.⁵¹ This probably appears more successful to modern viewers, and no doubt reflects the fact that Barclay (and Stirling) would now have been able to study the original much more closely and in better lighting conditions than in the Galerie Espagnole.

Yet another form of copy was also made whilst the original portrait was at Park Street, this time a photograph which must be one of the earliest photographic records of El Greco's art (Fig. 15). Like the two watercolors, the photograph is now in Glasgow Museums.⁵² Unlike the earlier Barclay copy and the engraving, the photograph and the second watercolor by Barclay record the original as having essentially the form and proportions visible today.⁵³ The photograph is inscribed on the mount as follows:

Dominico Theotocopuli. (El. Greco)

Photograph from the original portrait by himself, formerly in the Spanish Gallery at the Louvre, & sold at the Sale of the Pictures of Ex King Louis Philippe 1853 – The photograph afterward coloured in oil.

Here, the relatively crude oil paint and the bloom of the varnish have unfortunately marred the likeness to the original, at least to modern eyes, and likewise make it difficult to assess the quality or the precise photographic process used (which could have been either wet collodion or calotype). The early 1850s was an important period in the history of photography, as we have seen, and Stirling's active interest in how advances including wet collodion process, glass plate negatives, and albumen prints could improve book illustration was witnessed by a limited edition of his popular *Cloister Life of the Emperor Charles the Fifth*, also produced in 1853.⁵⁴ Hand-coloring in watercolors or oils, to overcome the most obvious limitation of photography compared with other methods of copying, was common from the 1840s onwards, and was

generally carried out by miniature painters, in this case probably Barclay, who was principally known as a miniature painter.⁵⁵ The name of the photographer of the El Greco is likewise unknown, though Nicolaas Henneman's firm did carry out other photography for Stirling in the years following the *Annals* Talbotypes volume.⁵⁶

This paper has attempted to demonstrate that many of the nineteenth-century difficulties and debates surrounding the reproduction of art have surprising parallels and continuing relevance in the age of internet and digital photography. For example, the initial optimism shared by William Stirling and others about the increased access to art offered by photography, and its usefulness as an aid to documentation and study, has been spectacularly borne out by means and on a scale they could never have dreamed of. But equally, perhaps now more than ever, when students of art history place such reliance on digital images that they have to be encouraged to compare these with the real thing, we need to bear in mind the concerns of art historians like Carl Justi around the ways in which the use of technology to reproduce art could lead to a devaluing of art and a loss of visual skills.

Illustrations captions:

Fig. 1 Diego Velázquez, *His Wife, Juana Pacheco*, salt print from calotype negative photograph by Nicolaas Henneman, 1847, 65 x 52 mm, from the lithograph by Enrique Blanco. In William Stirling, *Annals of the Artists of Spain* (London: John Ollivier, 1848), IV, *Talbotype Illustrations*, no 24. © Museo Nacional del Prado, Madrid.

Fig. 2 Diego Velázquez, *A Sybil (Portrait of Juana Pacheco?)*, oil on canvas, c. 1632, 62 x 50 cm. © Museo Nacional del Prado, Madrid.

Fig. 3 Diego Velázquez, *Retrato que se supone de la mujer de Velazquez* [*Portrait Supposed to Be of Velázquez's Wife*], lithograph by Enrique Blanco, 328 x 238 mm. In *Colección litográfica de los cuadros del Rey de España* [Collection of Lithographs of the Pictures of the King of Spain] dir. José Madrazo (Madrid: Real Establecimiento Litográfico, 1826), II, Plate LXVI.© Museo Nacional del Prado, Madrid.

Fig. 4 Diego Velazquez, *Die Sibylle* [*The Sybil*], wood engraving by R. Brend'amour after photograph by Juan Laurent, 90 x 70 mm. In Carl Justi, *Diego Velazquez und sein Jahrheit* [Diego Velazquez and his Times], (Bonn: Verlag Cohen, 1888), II, Fig. 23.

Fig. 5 Diego Velázquez, *Retrato que se cree ser de la mujer del autor* [*Portrait Believed to Be of the Artist's Wife*], albumen photograph by Juan Laurent y Minier, 1865-7, 278 x 228 mm. © Museo Nacional del Prado, Madrid.

Fig. 6 Bartolomé Esteban Murillo, *Self-Portrait*, engraving after Richard Collin, c. 1871-3, 69 x 56 mm. In Sir William Stirling Maxwell, Bart. [William Stirling], *Essay towards a Catalogue of Prints Engraved from the Works of Diego Rodriguez de Silva y Velazquez and Bartolomé Esteban Murillo* (London: privately printed, 1873), 48.

Fig. 7 Bartolomé Esteban Murillo, *Self-Portrait*, oil on canvas, c. 1668-70, 122 x 107 cm. © National Gallery, London.

Fig. 8 Bartolomé Esteban Murillo, *Self-Portrait*, engraving by Richard Collin, 1682, 360.7 x 243.8 mm. © Trustees of the British Museum, London.

Fig. 9 Bartolomé Esteban Murillo, *Self-Portrait*, engraving by Richard Collin, 96.5 x 89 mm. In Joachim Sandrart, *Academia nobilissimae artis pictoriae* [*Most Noble Academy of the Art of*

Painting] (Nuremberg: Froberger, 1683), Plate 8. Photograph: Hilary Macartney, by permission of the Trustees of the British Museum, London.

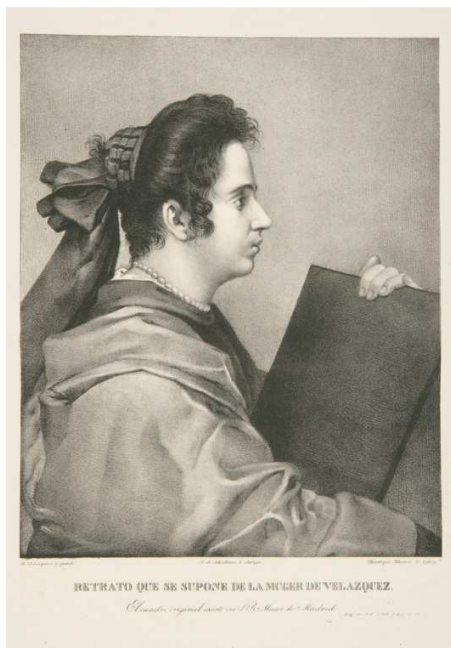
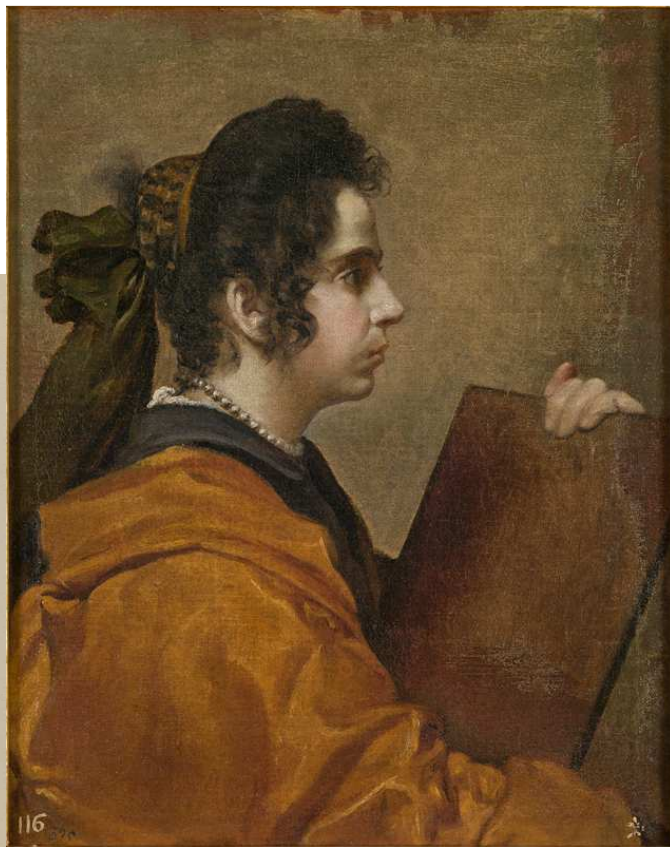
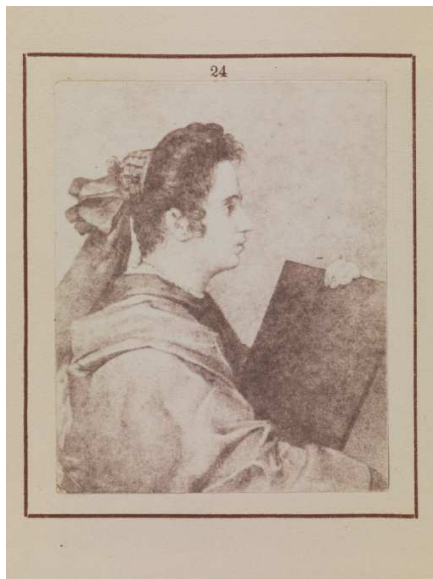
Fig. 10 After Bartolomé Esteban Murillo, *Self-Portrait*, watercolor copy, c. 1857, 321 x 262 mm. © CSG CIC Glasgow Museums Collection.

Fig. 11 Domenico Theotocopuli, known as El Greco, *Self-Portrait*, engraving by H. Adlard, 127 x 107 mm. In William Stirling, *Annals of the Artists of Spain* (London: John Ollivier, 1848), I, 276.

Fig. 12 El Greco (Domenico Theotocopuli), *Jorge Manuel Theotocopuli*, c. 1600-03, oil on canvas, 74 x 50.5 cm [formerly 81 x 56 cm]. © Seville: Museo de Bellas Artes.

Fig. 13 El Greco (Domenico Theotocopuli), *Self-Portrait* [now identified as *Jorge Manuel Theotocopuli*], watercolor by William Barclay, 1844-6, 170 x 147 mm. © CSG CIC Glasgow Museums Collection.

Figs. 1-3



Figs. 4-7



Die Sybylle



Bart. Murillo seipsum depin-
gens pro filiorum votis ac pre-
bus explendis

Figs. 8-10



Figs. 11-15



¹ This paper results from research on an international collaborative project on the photographic illustrations for William Stirling's *Annals of the Artists of Spain*, based at the University of Glasgow, in partnership with the National Media Museum (Bradford), Museo Nacional del Prado, and Centro de Estudios Europa Hispánica (Madrid). I am especially grateful to José Manuel Matilla at the Prado, who as co-director of the project, has discussed this paper with me and facilitated the use of material in the Prado collections.

²In practice, many scholarly art historical publications produced today continue to rely principally or wholly on black-and-white reproductions and outdated technology. Likewise, scholars of all but the most popular art historical areas are still frequently dependent on old and often poor reproductions for some of their key visual sources.

³ William Ivans, *Prints and Visual Communication* (Cambridge, Mass.: Harvard University Press, 1953), 124. See also Anthony Hamber, "The Use of Photography by Nineteenth-Century Art Historians", in Helene E. Roberts (ed.), *Art History through the Camera's Lens* (Amsterdam: Gordon and Breach, 1995), 89-121, for a critique of relevant literature in the field up to the 1990s. Important earlier surveys include Wolfgang M. Freitag, "Early Uses of Photography in the History of Art", *Art Journal* 39, no 2 (1979-80): 117-23.

⁴ William Stirling *Annals of the Artist of Spain*, 3 vols text (London: John Ollivier, 1848); vol. IV: *Talbotype Illustrations to the Annals of the Artists of Spain*, limited edition of 50 copies. A second, posthumous edition of the text was issued as volumes 1-4 of the *Works of Sir William Stirling-Maxwell*, 6 vols, ed. Robert Guy (London: John Nimmo, 1891) (hereafter Stirling,

Works), without the photographic illustrations. References are to the first edition unless otherwise specified.

⁵ The principal output of the project on the photographic illustrations for the *Annals of the Artists of Spain* will be a facsimile and critical edition of the volume, edited by Hilary Macartney and José Manuel Matilla. The preparation of the facsimile involves digital reconstruction of the illustrations, undertaken at the Prado Museum, with the aim of giving modern viewers the experience of how they would have looked when first produced.

⁶ Jonathan Brown, *Images and Ideas in Seventeenth-Century Spanish Painting* (Princeton: Princeton U. P., 1978), 6-7.

⁷ Carl Justi, *Diego Velazquez und sein Jahrhundert*, 2 vols (Bonn: Cohen, 1888); English ed. *Velazquez and his Times*, 1 vol (London: H. Grevel, 1889), trans. A. H. Keane. All references to the English edition unless otherwise specified.

⁸ Justi, *Velazquez*, 11.

⁹ See Enriqueta Harris, "Sir William Stirling-Maxwell and the History of Spanish Art", *Apollo* 79, no 2 (1964): 73-7.

¹⁰ Stirling, *Annals*, IV, viii.

¹¹ Stirling, *Annals*, III, 866 and note 3. He was soon disappointed by the technical problems, however, and especially the fading. For further discussion, see Hilary Macartney, "Experiments in Photography as the Tool of Art History, No. 1: William Stirling's *Annals of the Artists of Spain* (1848)", *Journal of Art Historiography* 5 (2011): 14-15.

¹² The particular selection of works photographed, including the choices of Spanish printmaking, are outlined by José Manuel Matilla in the forthcoming facsimile and critical edition of the *Talbotype Illustrations to the Annals of the Artists of Spain*.

¹³ See Josef Maria Eder, *History of Photography* [Geschichte der Photographie, 4th ed., 1932], trans. Edward Epstean (New York: Columbia U. P., 1945), 574-64, for an outline of the rise of photomechanical illustration. A brief survey of the case of Spanish art is given in Hilary Macartney, “The Reproduction of Spanish Art”, in Nigel Glendinning and Hilary Macartney (ed.), *Spanish Art in Britain and Ireland, 1750-1920: Studies in Reception in Memory of Enriqueta Harris Frankfort* (Woodbridge: Tamesis, 2010), 103-128. For a detailed study of reproduction of Velázquez at the Prado, see José Manuel Matilla (ed.), *Velázquez en blanco y negro* [Velázquez in black and white] (Madrid: Museo Nacional del Prado, 2000). Richard Benson, *The Printed Picture* (New York: MOMA, 2008) provides a wider perspective on image printing techniques up to the present day.

¹⁴ For the use of the term and its definition in relation to photography, see Helmut Gernsheim, *Incunabula of British Photographic Literature: A Bibliography of British Photographic Literature 1839-75 and British Books Illustrated with Original Photographs* (London & Berkeley: Scholar, 1978).

¹⁵ For descriptions of specific processes, see Dusan Stulik and Art Kaplan, *The Atlas of Analytical Signatures of Photographic Processes* (Los Angeles: The Getty Conservation Institute, 2013).

¹⁶ Trevor Fawcett, “Graphic versus Photographic in the Nineteenth-Century Reproduction”, *Art History* 9, no 2 (1986): 206.

¹⁷ Not all the illustrations were of wood engravings after photographs and had to be “supplemented, where these failed, by lithographed copies, old copper-plates and etchings” (Justi, *Velazquez*, 15).

¹⁸ Early proposers of this possible application of photography included the artist-photographer David Octavius Hill, who was also involved in photographic illustrations for the *Annals*, see Sara Stevenson, *The Personal Art of D. O. Hill* (New Haven: Yale, 2002), 84-5; and Hilary Macartney, “The Reproduction of Spanish Art: Hill and Adamson’s Calotypes and Sir William Stirling Maxwell’s *Annals of the Artists of Spain* (1848)”, *Studies in Photography* (2005): 18.

¹⁹ Justi, *Velazquez*, 15.

²⁰ See Stephen Bann (ed.), *Art and the Early Photographic Album*, *Studies in the History of Art* (New Haven: Yale, 2011), for the role of such albums within the historiography of art.

²¹ Leticia Ruiz Gómez, “Velázquez fotografiado: primeros ‘enfoques’” [Velázquez photographed: preliminary “focuses”], in Matilla, *Velázquez en blanco y negro*, 136.

²² *La obra de Velazquez en el Museo del Prado de Madrid* [The Work of Velazquez in the Prado Museum at Madrid] (Madrid: Laurent y Cie, s.a., c. 1889), see José Manuel Matilla, “La ilimitada multiplicación de la imagen: de la fotografía a la reproducción fotomecánica”, in Matilla, *Velázquez en blanco y negro*, 154.

²³ Wilhelm Waetzoldt, *Deutsche Kunsthistoriker*, 2 vols (Leipzig: E. A. Seemann, 1924), II, *Von Passavant bis Justi*, 265.

²⁴ Bernard Berenson, “Isochromatic Photography and Venetian Painting”, *Nation* 57, no 1480 (1893): 346-7; reprinted in *Visual Resources* 3, no 2 (1986): 134-8. Although the introduction of isochromatic photographic emulsions provided improved spectral sensitivity, in fact it was not until the early twentieth century that panchromatic black-and-white photographic negatives became available.

²⁵ Carl Justi, *Johann Joaquim Winckelmann: sein Leben, seine Werke und sein Zeitgenossen*, 3 vols (Leipzig: Vogel, 1866-72).

²⁶ Walter Benjamin, “L’oeuvre d’art à l’époque de sa reproduction mécaniste” (trans. Pierre Klossowski), *Zeitschrift für Sozialforschung* 5 (1936): 40-68; English edition “The Work of Art in the Age of Mechanical Reproduction”, in *Illuminations*, ed. Hannah Arendt, trans. Harry Zohn (London: Fontana, 1968), 214-18; Erwin Panofsky, “Original und Faksimilereproduktion”, *Der Kreis. Zeitschrift für künstlerische Kultur* 7 (1930): 3-16; English edition “Original and Facsimile Reproduction”, trans. Timothy Grundy, *Res* 57-58 (2010): 330-8. A summary of the early twentieth century debate is provided in György Markus, “Walter Benjamin and the German ‘Reproduction Debate’”, in *Modernebegreifen: zur Paradoxie eines sozio-ästhetischen Deutungsmusters*, ed. Christine Magerski, Robert Savage, and Christiane Weller (Wiesbaden: Deutscher Universitäts-Verlag, 2007), 351-64. See also Horst Bredekamp, “A Neglected Tradition? Art History as *Bildwissenschaft*”, *Critical Inquiry* 29, no 3 (2003): 418-28.

²⁷ Fawcett, “Graphic versus Photographic”, 207. I am grateful to the late Dr Wolfgang M. Freitag for discussing this topic with me, including the context of the debate on photographic reproduction of art (personal communication, 29/10/2011). Dr Karin Hellwig (Zentralinstitut für Kunstgeschichte, Munich), a scholar of Carl Justi’s work, believes that it is difficult to verify these claims about Justi’s distrust of photography, due to the lack of reliable sources. Nevertheless, she suspects they may be true, and also notes that Justi disliked teaching because his students did not have direct knowledge of the original artworks (personal communication, 4/11/2011).

²⁸ Roger Fenton became the first museum photographer when he was employed by the British Museum in 1853 (see Anthony Hamber, “*A Higher Branch of the Art*”: *Photographing the Fine Arts in England, 1839-1880* (Amsterdam: Gordon and Breach, 1996), 379. The first photography

inside the Prado Museum is thought to date from c. 1850, see Ruiz Gómez, “Velázquez fotografiado”, 129.

²⁹ For descriptions of these changes in materials and processes, see esp. Eder, *History of Photography*, 357-63 (Wet Collodion Process); 534-5 (Printing-Out Processes); 338-41 (Glass Negatives); 316-27 (Calotype Process, Negatives and Positives on Paper).

³⁰ See Ruiz Gómez, “Velázquez fotografiado”, 137-8.

³¹ Letter from Nicolaas Henneman to William Henry Fox Talbot, Reading, 5 May 1847, <http://foxtalbot.dmu.ac.uk/letters/transcriptDocnum.php?docnum=05936> (accessed 12/10/2014).

³² Stirling, *Annals*, 1265. For further discussion of the Henneman photographic proofs of these, and illustrations of examples, see Hilary Macartney, “William Stirling and the Talbotype Illustrations”, 300-3 and Figs. 9-12.

³³ William Stirling (Sir William Stirling-Maxwell), *Essay towards a Catalogue of Prints Engraved from the Works of Diego Rodriguez de Silva Velazquez and Bartolomé Esteban Murillo* (London: privately printed, 1873).

³⁴ Charles B. Curtis, *Velazquez and Murillo: A Descriptive and Historical Catalogue of the Works of Don Diego de Silva Velazquez and Bartolomé Esteban Murillo* (London/New York: Sampson Low/Bouton, 1883). For contact between Curtis and Stirling, see Hilary Macartney, “‘De todos los pintores, el favorito más universal’. Sir William Stirling Maxwell y el gusto por Murillo en Gran Bretaña y los Estados Unidos en la segunda mitad del siglo XIX”, in Miguel Cabañas Bravo (ed.), *El Arte español fuera de España*, Jornadas de Arte (Madrid: CSIC, 2003), 557-68.

³⁵ Enriqueta Harris, “Velázquez and Murillo in Nineteenth-Century Britain: An Approach through Prints”, *Journal of the Warburg and Courtauld Institutes* 50 (1987): 148-59. A list of

prints after Velázquez in an album now in the Hispanic Society of America, is given by Patrick Lenaghan, “Engraved Works of Velazquez I”, in Matilla, *Velázquez en blanco y negro*, Apéndice 1, 195-204.

³⁶ William Stirling (Sir William Stirling-Maxwell), *Examples of Engraved Portraiture in the Sixteenth Century* (London and Edinburgh: privately printed), 1872, v.

³⁷ Ernst H. Gombrich, *Art and Illusion: A Study in the Psychology of Pictorial Representation* (London/ New York: Phaidon/ Pantheon, 1960), Fig. 51, citing F. C. Bartlett, *Remembering: A Study in Experimental and Social Psychology* (Cambridge: Cambridge U. P., 1932).

³⁸ Inscribed: Bartolomeus Morillus Hispalensis/ se-ipsum depingens pro filiorum votis acprecibus explendis/ Nicolaus Omazurinus Antuerpiensis/ Tanti Viri simulacrum in Amicitiae Symbolon/ in aesincidi Mandavit Anno 1682. [Bartolomé Murillo of Seville/painting himself to fulfill the wishes and prayers of his children/ Nicolaus Omazur of Antwerp/ ordered the likeness of this man as a symbol of friendship/ owed in the year 1682.]. For recent interpretation of the painting, see Suzanne Waldeman, *El artista y su retrato en la España del siglo XVII* (Madrid: Alianza, 2007), 151-6; and Gabriele Finaldi (ed.), *The Art of Friendship: Bartolomé Esteban Murillo and Justino de Neve* (Madrid/Seville/London: Museo Nacional del Prado/Focus-Abengoa/Dulwich Picture Gallery, 2012), no 2.

³⁹ Stirling, *Catalogue of Prints after Velazquez and Murillo*, 124-5.

⁴⁰For the original in the nineteenth century, see Neil Maclaren and Allan Braham, *National Gallery Catalogues: The Spanish School* (London: National Gallery, 1970) no 6153. See also Stirling, *Works*, IV, 1067, note 3. Curtis, *Velazquez and Murillo*, 294, no 462, believed the Galerie Aguado picture was a copy by Cabral Bejerano, from which other engravings were made.

⁴¹ However, Stirling's description in the *Annals* of Sofonisba Anguissola's *Self-Portrait at the Spinnet*, which was also at Althorp, suggests he may have visited the collection, though the visit is not mentioned in his travel itineraries. See Stirling, *Annals*, 190-1; and Stirling of Keir Papers, on deposit at Glasgow Archives, Mitchell Library, Glasgow (ref. T-SK 28/10).

⁴² The copies of the Murillo *Self-Portrait* (PR 2014.1.38) and the Ribalta (PR 2014.1.30) were acquired by Glasgow Museums at Christie's, *Sale of Objects of Art, Furniture, Pictures [...] the Property of Archibald Stirling of Keir*, Dunblane, 22-24 May, 1995, in lots 435-6, which consist of two boxes, labelled "Illustrations for Annals of the Artists of Spain", containing drawings, watercolours and prints. For the reproduction of the Ribalta, see Stirling, *Works*, II, opposite 568.

⁴³ Stirling, *Works*, IV, 1067, note 4.

⁴⁴ Stirling, *Annals*, 276-90.

⁴⁵ Fernando Marías, "Portraits", in Fernando Marías (ed.), *El Greco of Toledo* (Toledo: Fundación El Greco 2014), 154 and note 3. An earlier reproduction may have appeared in 1843. See Stirling, *Annals*, xli for the caption: "Domenico Theotocopuli, known as El Greco. From a picture by himself in the Louvre. Galerie Espagnole; No. 260. Engraved on steel by H. Adlard, to face 276."

⁴⁶ Stirling, *Annals Talbotypes*, no 10. For discussion of this painting in relation to Stirling's attitude to El Greco, including its contested attribution and identity, see Hilary Macartney, 'Retrato enigmático. La Dama del armiño, Stirling Maxwell y la recepción de El Greco', *El Greco en su IV centenario. Patrimonio hispánico y diálogo intercultural* (Toledo 01-04/10/14). *Actas*, forthcoming.

⁴⁷ Stirling, *Annals*, 285.

⁴⁸ See also Marías, "Portraits", 154, on the specific information provided by the portrait.

⁴⁹ For Barclay (1797-1859) in relation to Stirling, see Hilary Macartney, “La colección de arte español formada por Sir William Stirling Maxwell”, in María Dolores Antigüedad del Castillo-Olivares and Amaya Alzaga Ruiz (ed.), *Colecciones, expolio, museos y mercado artístico en España en los siglos XVIII y XIX* (Madrid: Ramón Areces, 2011), 250.

⁵⁰ In the second edition of the *Annals*, the supposed El Greco *Self-Portrait*, from the same engraving by Adlard after Barclay’s first watercolor copy, was illustrated (Stirling, *Works* II, 328), and the original mistakenly described as “now at Keir” (II, 285), perhaps due to the inscriptions on the later copy by Barclay (see note 51) and the photograph, referring to the painting’s presence at Park Street in 1853.

⁵¹ Inscribed on the mount in Stirling’s hand: “El Greco./ Copied by W. Barclay from the original picture/ at Park S^t. July 1853.”

⁵² Glasgow Museums PR 2014.1.45, PR 2014.1.44, and PR 2014.1.39 respectively.

⁵³ See, however, Marías, “Portraits”, 155, who records that the painting was apparently cut away on the right after 1908, thus reducing the size from 81 x 56 cm to 74 x 50.5 cm. The flap of material over the sitter’s right shoulder and upper arm is not clear in either the watercolor or the photograph from 1853, and both also seem to show an extra lock of hair at the front. These differences might reflect earlier intervention by restorers on the original.

⁵⁴ William Stirling, *The Cloister Life of the Emperor Charles the Fifth* (London: John Ollivier, 3rd ed. 1853), limited edition of 12 copies, each with 18 mounted albumen prints.

⁵⁵ On the early popularity of coloring photographs, see Hamber, “*A Higher Branch of the Art*”, 87. For Barclay as a miniature painter, see Macartney, “The Reproduction of Art”, 116.

⁵⁶ Evidence of later photographic work carried out by Henneman's firm for Stirling is provided by bills in the Maxwells of Pollok Papers on deposit at Glasgow Archives, Mitchell Library, Glasgow(ref. T-PM 130).